इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 12939 (1990): Method for heat resistance test of frozen semen of breeding bull [FAD 5: Livestock Feeds, Equipment and Systems]

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS 12939 : 1990
(Reaffirmed 2000)

Indian Standard

METHOD FOR HEAT RESISTANCE TEST OF FROZEN SEMEN OF BREEDING BULL

UDC 636·082·453·53 : 636·293 : 620·193·5

© BIS 1990

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 1990

Price Group 1

Animal Reproduction Equipment and Systems Sectional Committee, FAD 41

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 25 June 1990, after the draft finalized by the Animal Reproduction Equipment and Systems Sectional Committee had been approved by the Food and Agriculture Division Council.

Artificial insemination (A/I) technique is being increasingly used for improvement of livestock in our country. The use of frozen semen of breeding bulls for such programmes is gaining popularity due to its long storability and easy transportation. The test method contained in this standard gives an indication of the heat resistance of frozen semen of breeding bulls which is intended for long term storage.

In the preparation of this standard, considerable assistance has been derived from ISO/TC 34/WG 5 N 73 'Frozen semen of breeding bulls — thermoresistance test' issued by the International Organisation for Standardization.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

METHOD FOR HEAT RESISTANCE TEST OF FROZEN SEMEN OF BREEDING BULL

1 SCOPE

1.1 This standard specifies the method for determination of heat resistance of frozen semen of breeding bull. The method is applicable to frozen semen intended for long term storage.

2 DEFINITION

2.1 For the purpose of this standard, the following definition shall apply.

2.1 Heat Resistance Test

A biological probe by which relative viability of spermatozoa is examined.

3 PRINCIPLE

3.1 Thawing of frozen semen at 35°C for 1 min.

3.2 Determination of the percentage of living spermatozoa in semen before the test.

3.3 Keeping the semen at 45°C for 1 h or at 4°C for 24 h.

3.4 Determination of response of the semen to warm or cold effect.

4 COLLECTION OF SAMPLES

4.1 Take out randomly the necessary number of doses of frozen semen from any type of packaging so that the quantity of semen sample is 1·0 ml (minimum). The sample taken from the container that serves for 28 days control should be of ejaculates from the same bull collected on the same day, that is, bears the same production number.

5 APPARATUS

5.1 Water Bath, able to keep 35 ± 0·5°C.

5.2 Wide Mouth Thermos, containing water at 45 ± 1°C.

5.3 Refrigerator, able to keep 4 ± 1°C.

5.4 Glass Tubes, 10 mm × 100 mm.

5.5 Microscope

5.6 Blom Chamber

5.7 Temperature Controlled Metal Plate, Under the objective of the microscope at 37 C.

6 PROCEDURE

6.1 Thawing

Put the straw into a water bath at 35°C for at least ½ minute.

6.2 Microscopic Examination

6.2.1 After cutting both ends of the straw, let the thawed semen flow into one glass tube.

6.2.2 Before resistance test, place small part of the semen from the glass tube on to a blom chamber. Determine the ratio of living and non-living spermatozoa under the microscope.

6.2.3 Note test data on a registration sheet made for this purpose.

6.2.4 *Heat Probe*

Place the glass tubes into the thermos filled with water at 45 ± 1°C. The tubes are fixed so that they are pushed half way through the holes (5-6 mm in diameter) of a foamed latex layer fitted on the top of the thermos. The holes for the tubes are prepared round the edge of the latex, while in the middle of the latex there is a hole for thermometer. Both the lower part of the tubes and the end of thermometer shall be dipped into the water. Keep the tubes in water for 1 h.

6.2.5 *Cold Probe*

Place the tubes in a rack and put it into the refrigerator for 24 h at 4 ± 1°C.

6.2.6 On completion of exact time specified in **6.2.4** and **6.2.5**, take part of the semen out of the tube and place it into the blom chamber and determine the percentage of living spermatozoa under the microscope.

6.2.7 Note the result.

7 CONCLUSION FROM THE RESULTS

7.1 The frozen semen is suitable for long term storage if the percentage of living cells has not decreased by more than 20 percent compared with that of living cells determined before the probe, by either of the methods.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Revision of Indian Standards

Indian Standards are reviewed periodically and revised, when necessary and amendments, if any, are issued from time to time. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition. Comments on this Indian Standard may be sent to BIS giving the following reference:

Doc : No. FADC 41 (3078)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75
Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices:

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	331 01 31 331 13 75
Eastern : 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola CALCUTTA 700054	37 86 62
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	2 18 43
Southern : C.I.T. Campus, IV Cross Road, MADRAS 600113	41 29 16
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) BOMBAY 400093	6 32 92 95

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR.
COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI.
HYDERABAD. JAIPUR. KANPUR. PATNA. THIRUVANANTHAPURAM.

Printed at Arcee Press, New Delhi, India